

SHOWER SURROUND STRUCTURE

BACKGROUND OF THE INVENTION

- [1] The present invention relates to an interface between panels of a molded plastic shower surround and a method of assembly therefor.
- [2] Conventional modular tub/shower units often include a base portion at the bottom and two or more wall portions. The whole structure is mounted adjacent a wall or corner to form a waterproof surround. The fully enclosed waterproof structure is highly advantageous in that it prevents the escape of water into the wall structure despite the shower spraying water onto the surrounding walls.
- [3] One problem which arises with products of this type is that of an uncomplicated assembly which will form a suitable joint between the surround portions. Various styles of joint have been used, each of which provide particular tradeoffs in complexity, aesthetics, and sealing ability.
- [4] Accordingly, it is desirable to provide a waterproof assembly interface between wall portions of a molded plastic shower surround which is uncomplicated and aesthetically pleasing while assuring an effective watertight seal.

SUMMARY OF THE INVENTION

- [5] The molded shower surround according to the present invention includes a base portion which receives wall portions and a corner portion therebetween. The base portion is located in a corner between two walls. The wall portions are located upon a ledge defined by the base portion. A corner slot is located within the ledge to receive a corner tab which extends from a lower end of the corner portion.
- [6] The corner portion includes an upper lock tab and a lower lock tab adjacent the outer edges. An upper lock slot and a lower lock slot are located adjacent the inner edge of each wall portion which engage the corner portion. Each side of the corner portion includes a corner flange arranged substantially perpendicular to a corner planar surface. Each of the corner planar surfaces are substantially parallel to the wall portions when in a mounted position. The corner flange is received within a molded slot which extends along the vertical

length of the wall portion to provide an aesthetically pleasing interface. The corner flange and the molded slots when combined with the upper lock tab and the lower lock tab, which respectively engage the upper lock slot and the lower lock slot, provide a watertight interlocking arrangement between the corner portion and the wall portions.

[7] In one assembly method, the base portion is positioned. The wall portions are then assembled to the corner portion. The three connected sections are then fitted to the base portion such that the corner portion is aligned such that the corner flanges are located within the molded slots. The corner portion is then slid downward until the corner tab enters the corner slot and the portions are locked to the base portion.

[8] In another assembly method the base portion is initially not position or fastened to the wall. The corner and wall portions are assembled to the base portion such that the assembled shower assembly can be "slid" into the corner.

[9] The present invention therefore provides a waterproof assembly interface between wall portions of a molded plastic shower surround which is uncomplicated and aesthetically pleasing while assuring an effective watertight seal.

BRIEF DESCRIPTION OF THE DRAWINGS

[10] The various features and advantages of this invention will become apparent to those skilled in the art from the following detailed description of the currently preferred embodiment. The drawings that accompany the detailed description can be briefly described as follows:

[11] Figure 1 is a general exploded rear view a molded shower surround according to the present invention;

[12] Figure 2 is an expanded view of a base portion mounted adjacent a corner between two walls;

[13] Figure 3 is an exploded front view a molded shower surround showing assembly of wall and corner portions to the base portion of Figure 2;

[14] Figure 4 is an front perspective view a molded shower surround in an assembled condition;

[15] Figure 5 is an expanded rear view of a corner portion adjacent a base portion;

- [16] Figure 6 is a sectional view of the corner portion mounted to the base portion taken along the line 6-6 in Figure 5;
- [17] Figure 7 is an expanded view of an inner edge of a wall portion which engages a corner portion of the shower surround;
- [18] Figure 8 is exploded view of a lock slot in an inner edge of a wall portion which engages a corner portion of the shower surround;
- [19] Figure 9 is top partial sectional view of the corner portion interface with the wall portions;
- [20] Figure 10 is a front view a molded shower surround according to the present invention; and
- [21] Figure 11 is a sectional view of an end trim portion taken along line 10-10 in Figure 10.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

- [22] Figure 1 illustrates a general exploded view of a molded shower surround 20 which is formed of four pieces of molded plastic. A base portion 22 receives wall portions 24 and 26, a corner portion 28 therebetween, and an edge trim portion 27a, 27b. It should be understood that any number of wall portions will benefit from the present invention and that although a particular component arrangement is disclosed in the illustrated embodiment, other arrangements will benefit from the instant invention.
- [23] Referring to Figure 2, the base portion is preferably located in a corner between two walls W1 and W2 which typically include a multiple of vertical wooden studs Sv and horizontal studs Sh. The base portion 22 fits adjacent the horizontal studs Sh. It should be understood that the wooden studs Sv, Sh are typically two-by-fours or the like usual for wall framing.
- [24] The base portion 28 defines a floor 34 bounded by a raised ledge 36. The ledge 36 of the base portion 22 preferably includes a first side 32a located perpendicular to a second side 32b. The hypotenuse side 32c of the base portion is preferably arcuate and includes a relief 33 in which a shower door (not shown) is located. A base periphery flange 38a, 38b

- preferably extend from the sides 32a, 32b to receive fasteners 40 such as nails which pass through the flanges 38a, 38b and into the vertical wooden studs Sv.
- [25] Referring to Figure 3, the wall portions 24, 26 are located upon the ledge 36 on sides 32a, 32. The wall portions 24, 26 include periphery wall flanges 24f, 26f which receive fasteners 40 such as nails which pass through the wall flanges 24f, 26f and into the vertical wooden studs Sv. Preferably, the flanges 24f, 26f are located inside the flanges 38a, 38b. That is, the wall flanges 24f, 26f are in front of the flanges 38a, 38b relative to the floor 34.
- [26] A corner slot 42 is located within the ledge 36 where the sides 32a, 32b meet. A corner tab 44 which extends from a lower end of the corner portion 28 fits into the corner slot 42 (Figure 5) to provide a waterproof join between the walls 24, 26 (Figure 4).
- [27] Referring to Figure 5, the corner portion 28 includes an upper lock tab 46 and a lower lock tab 48. The upper lock tab 46 extends from a horizontal top 50 of the corner portion 28. That is, the upper lock tab 46 is generally vertical. The lower lock tab 48 is preferably L-shaped having a horizontal portion 48h and a vertical portion 48v.
- [28] Referring to Figure 6, the corner tab 44 preferably includes a step shape having a horizontal flat 50 which mates atop the ledge 36. The corner tab 44 thereby engages the corner portion 22 with the base portion 22.
- [29] Referring to Figure 7, an upper lock slot 52 and a lower lock slot 54 are located adjacent the inner edge 24I and 26I of each wall portions 24, 26 (also illustrated in Figure 1). The inner edge is herein defined as the edge of the wall portions 24, 26 which engage the corner portion 28. The upper lock slot 52 and the lower lock slot 54 will not be visible upon installation of the corner portion 28.
- [30] The upper lock slot 52 is located within a raised area 56 which extends from a planar portion 58 of each wall portion 24, 26. The planar portion 58 generally includes the flange 24f, 26f. The raised area 56 extends toward the interior of the shower surround 20 (Figure 4). The raised area 56, at least in part, is preferably of an aesthetically pleasing appearance of various designs and shapes and may alternatively or additionally include functional features such as shelves or the like. The upper lock slot 52 preferably defines an angular opening which includes an open end 59 which extends through the top of the raised area 56 to receive the upper lock tab 46 (Figure 8). The upper lock tab 46 and the upper lock slot 52 are

preferably arranged to be generally parallel to an axis A which bisects an angle formed between the wall portions 24, 26 (Figure 9).

[31] The lower lock slot 54 includes a lock slot tab 60 which extends inward of the raised area 56. That is, the upper lock slot tab 60 extends toward the interior of the shower surround 20 to engage the vertical portion 48v of the lower lock tab 48 (Figure 4).

[32] Referring to Figure 9, each side of the corner portion 28 includes a corner flange 62 arranged substantially perpendicular to a corner planar surface 64. The corner flanges 62 are located along the outer vertical ends of the corner portion 28 to provide an interface with the wall portions 24, 26. Each of the corner planar surfaces 64 are substantially parallel to the wall portions 24, 26 when in a mounted position. The corner flange 62 is received within a molded slot 66 which extend along the vertical length of the wall portion 24, 26 to provide an aesthetically pleasing and waterproof interface.

[33] The corner flange 62 and the molded slot 66, when combined with the upper lock tab 46 and the lower lock tab 48 (Figure 5) which respectively engage the upper lock slot 52 and the lower lock slot 54, provide a watertight interlocking arrangement between the corner portion 28 and the wall portions 24, 26.

[34] Referring to Figure 10, each edge trim portion 27a, 27b mounts respectively to the wall portions 24, 26 to secure the edges to a vertical stud Sv (Figure 11). The edge trim portions 27a, 27b support a glass enclosure 68 including side glass panels 68a, 68b.

[35] Referring to Figure 11, each edge trim portion 27a, 27b includes a glass groove 70 to receive the side glass panel 68a. It should be understood that although only each edge trim portion 27a is illustrated in Figure 11, edge trim portion 27b is constructed in a likewise manner. Edge trim portion 27a overlays the wall periphery flanges 26f and preferably mates with the wall portion 26 at vertical interface 72. Vertical interface 72 prevents a buildup of water therebetween due to water being able to drain vertically downward.

[36] Preferably, glass groove 70 includes an aperture to receive a fastener 74 such as a screw. The fastener 74 passes through the glass groove 70 and engages into the wall W1 and vertical stud Sv. The fastener 74 is enclosed by the side glass panel 68a which fits into the glass groove 70 preferably through a sealant-less joint. That is, the flexibility of the glass

groove 70 provides for an interference fit with the side glass panel 68a which minimizes or eliminates the need for caulk.

[37] In one assembly method, the base portion 22 is mounted to a wall of a structure. Preferably, the base portion 22 is located in a corner. The wall portions 24, 26 are then assembled to the corner portion 28. The three connected sections 24, 26, 28 are then fitted to the base portion 22 such that the corner portion 28 is aligned and the corner flanges are located within the molded slots. The corner portion 28 is then aligned such that the corner flanges 62 are located within the molded slots 66 and the portions 24, 26, 28 are locked to the base portion 22. Preferably, the corner portion and a wall portion 24, 26 is locked into a sub-assembly then this sub-assembly is lifted and slide onto to the second wall which may already be mounted to the base portion 22. Each edge trim portion 27a, 27b is then mounted to the wall portions 24, 26 and the glass enclosure 68 without the need for caulk.

[38] In another assembly method the base portion 22 is initially not position or fastened to the structure such as a corner or wall. The corner portion 28 and wall portions 24, 26 are assembled to the base portion 22 such that the assembled shower assembly can be "slid" into the corner.

[39] It should be understood that relative positional terms such as "forward," "aft," "upper," "lower," "above," "below," and the like are with reference to the normal operational attitude of the vehicle and should not be considered otherwise limiting.

[40] The foregoing description is exemplary rather than defined by the limitations within. Many modifications and variations of the present invention are possible in light of the above teachings. The preferred embodiments of this invention have been disclosed, however, one of ordinary skill in the art would recognize that certain modifications would come within the scope of this invention. It is, therefore, to be understood that within the scope of the appended claims, the invention may be practiced otherwise than as specifically described. For that reason the following claims should be studied to determine the true scope and content of this invention.